402721

ORIGINAL
(Red)

R-585-2-1-2

SITE VISIT SUMMARY REPORT
FOR
FMC MARCUS HOOK
PREPARED UNDER

TDD NO. F3-9012-14
EPA NO. PA-971
CONTRACT NO. 68-01-7346

FOR THE

HAZARDOUS SITE CONTROL DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

FEBRUARY 5, 1991

NUS CORPORATION
SUPERFUND DIVISION

SUBMITTED BY

Not responsive due to revised scope

PROJECT MANAGER

REVIEWED AND APPROVED BY

Not responsive due to revised scope

ASSISTANT MANAGER

1.0 FIELD TRIP REPORT

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1.1 Summary

On Tuesday, January 22, Wednesday, January 23, and Thursday, January 24, 1990, FIT 3 personnel [redacted] conducted a site inspection of the FMC Marcus Hook site, located in Marcus Hook, Chester County, Pennsylvania. The weather on Tuesday was extremely cold, with temperatures in the low to mid-teens. On Wednesday and Thursday, the weather was cold and sunny, with temperatures in the low- to mid-30s.

Not responsive due to revised scope

Deviations from the Sampling Plan

- No surface soil sample was obtained in lot no. 16. This area was hard-packed fill material used for a parking lot.
- No surface sample and subsurface sample were obtained from the old carbon disulfide tank area in lot no. 19. This area was covered with concrete.
- The inactive process well located on lot no. 16 was not sampled. The open-topped well was filled with cans and debris, and the inactive pump and lines were still in the well.
- The monitoring wells sampled on the Marcus Hook Processing property were changed, as per EPA's request, based on past sample results.

1.2 Persons Contacted

1.2.1 Prior to Field Trip

William Steuteville
U.S. EPA
841 Chestnut Building
Ninth and Chestnut Streets
Philadelphia, PA 19107
(215) 597-6678

Douglas Fox
U.S. EPA
841 Chestnut Building
Ninth and Chestnut Streets
Philadelphia, PA 19107
(215) 597-9328

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1.2.1 Prior to Field Trip

Robert Caron
U.S. EPA
841 Chestnut Building
Ninth and Chestnut Streets
Philadelphia, PA 19107
(215)597-8170

Benjamin Mykijewycz
U.S. EPA
841 Chestnut Building
Ninth and Chestnut Streets
Philadelphia, PA 19107
(215) 597-3535

Lorie Acker
U.S. EPA
841 Chestnut Building
Ninth and Chestnut Streets
Philadelphia, PA 19107
(215)597-8333

[redacted] Not responsive due to revised scope
Marcus Hook Properties
Northwestern Corner of
Johnson and Cherry Streets
Jenkintown, PA 19046
(215) 886-2320

[redacted] Not responsive due to revised scope
K & S Waste Processors
210 East Tenth Street
Marcus Hook, PA 19061
(215) 494-4606

[redacted] Not responsive due to revised scope
Envirosafe Management Services
900 East Eighth Avenue
Suite 200
King of Prussia, PA 19406
(215) 962-0800

George Danyliw
Pennsylvania Department of
Environmental Resources
1875 New Hope Street
Norristown, PA 19401
(215) 270-1759

1.2.2 At the Site

David Cassar
Cathy Mangano
Marcus Hook Business and Commerce Center
301 East Tenth Street
Marcus Hook, PA 19061
(215) 494-2154

Earl Marcotte
Marcus Hook Processing
East Tenth Street
Marcus Hook, PA 19061
(215) 485-4910

1.2.3 Water Supply Well Information

The site is located in a heavily industrialized urban area. No wells were located in proximity to the site.

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1.3 Site Observations

- The OVM background reading was 0.2 ppm; no readings above background were recorded, except inside one of the wells.

- OVM readings up to 5 ppm were detected inside monitoring well no. 6. No readings above background were recorded above the well because of strong winds.

- The mini-alert was set at the X1 position; no readings above background were recorded.

- Numerous open holes into the underlying storm drains and steam vents were observed throughout the site.

- Scraped-up dirt and debris mixed with glass tubes were observed on the southeastern side of building no. 7.

- Five to six plastic drums were staged in the area southeast of building no. 7.

- A drum was observed in Marcus Hook Creek, below the outfall to lot no. 11.

- Lot nos. 20, 21, and 22 appeared to have been plowed over with fill material (rubble and cement, etc.).

- All monitoring wells located on the Marcus Hook Processing property were capped and locked.

- All other monitoring wells that were flush with the ground were capped but not locked.

- The fence on the western border of the site (lot no. 20) was flattened down. A school was only about 300 feet west of the fence. An old concrete structure that was inside the fenced area was full of grafitti.

- The BP Refinery, located across Marcus Hook Creek, east of the site, apparently discharges cooling water. The stream was considerably warmer downstream from the outfall.

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- The old production well located on K & S Processing's property (lot nos. 19 and 16) was open cased and filled with old well lines and debris.

- The area around the old carbon disulfide tanks was covered with concrete.

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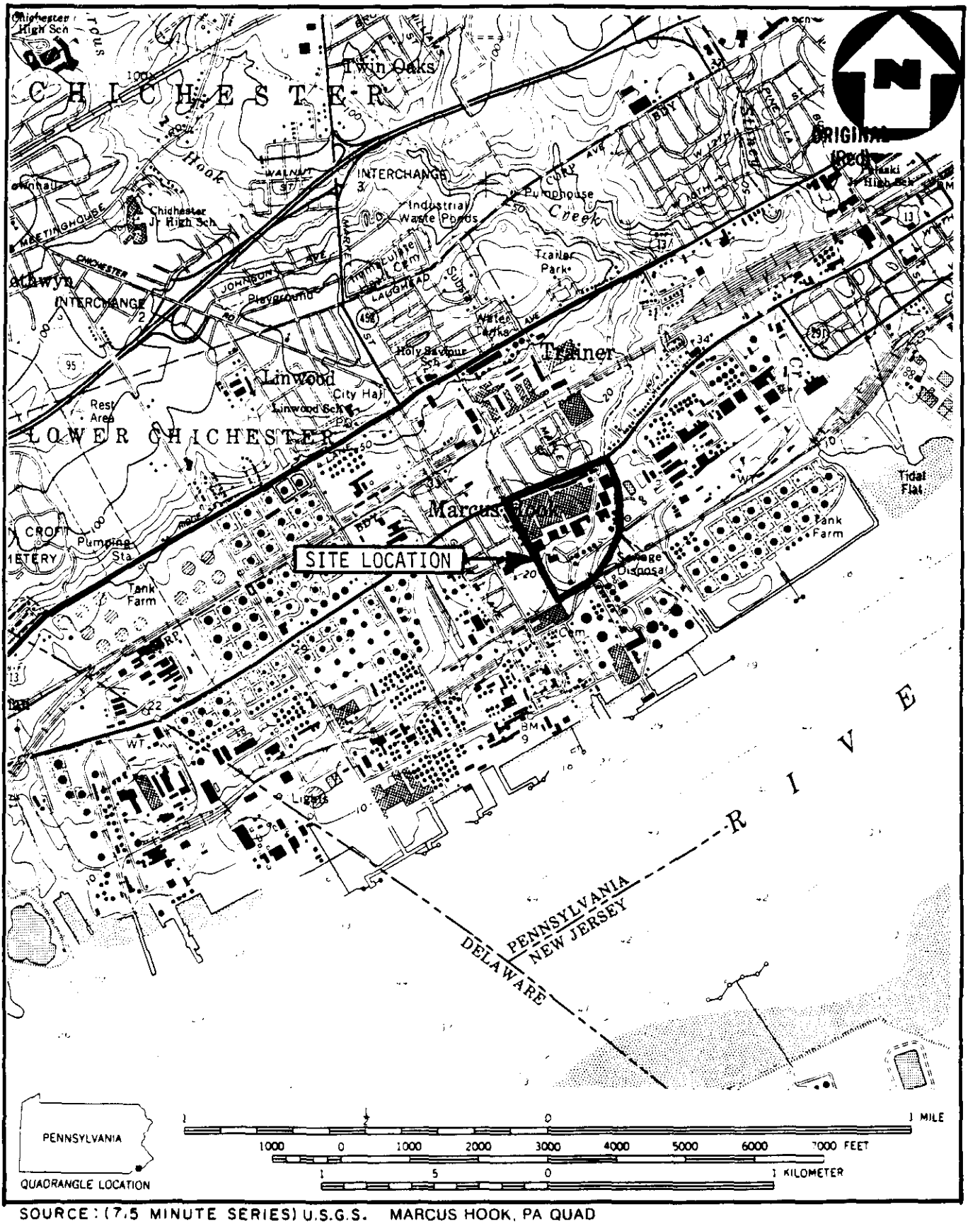
ATTACHMENT 1



SOURCE: (7.5 MINUTE SERIES) U.S.G.S. MARCUS HOOK, PA QUAD

FIGURE 1

SITE LOCATION MAP

FMC - MARCUS HOOK, MARCUS HOOK, PA

SCALE 1: 24000

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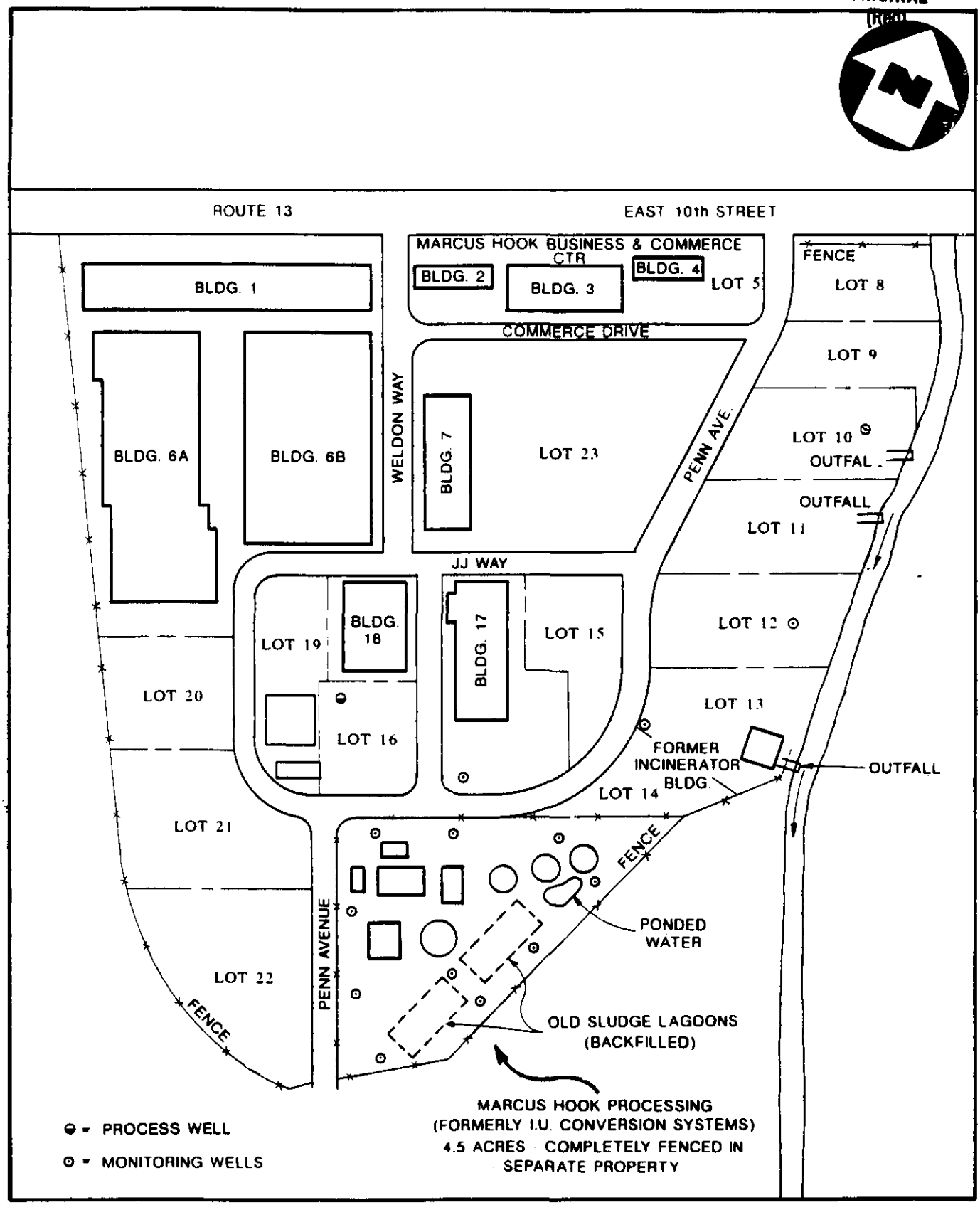

SITE SKETCH

FMC - MARCUS HOOK, MARCUS HOOK, PA

(NO SCALE)

FIGURE 2

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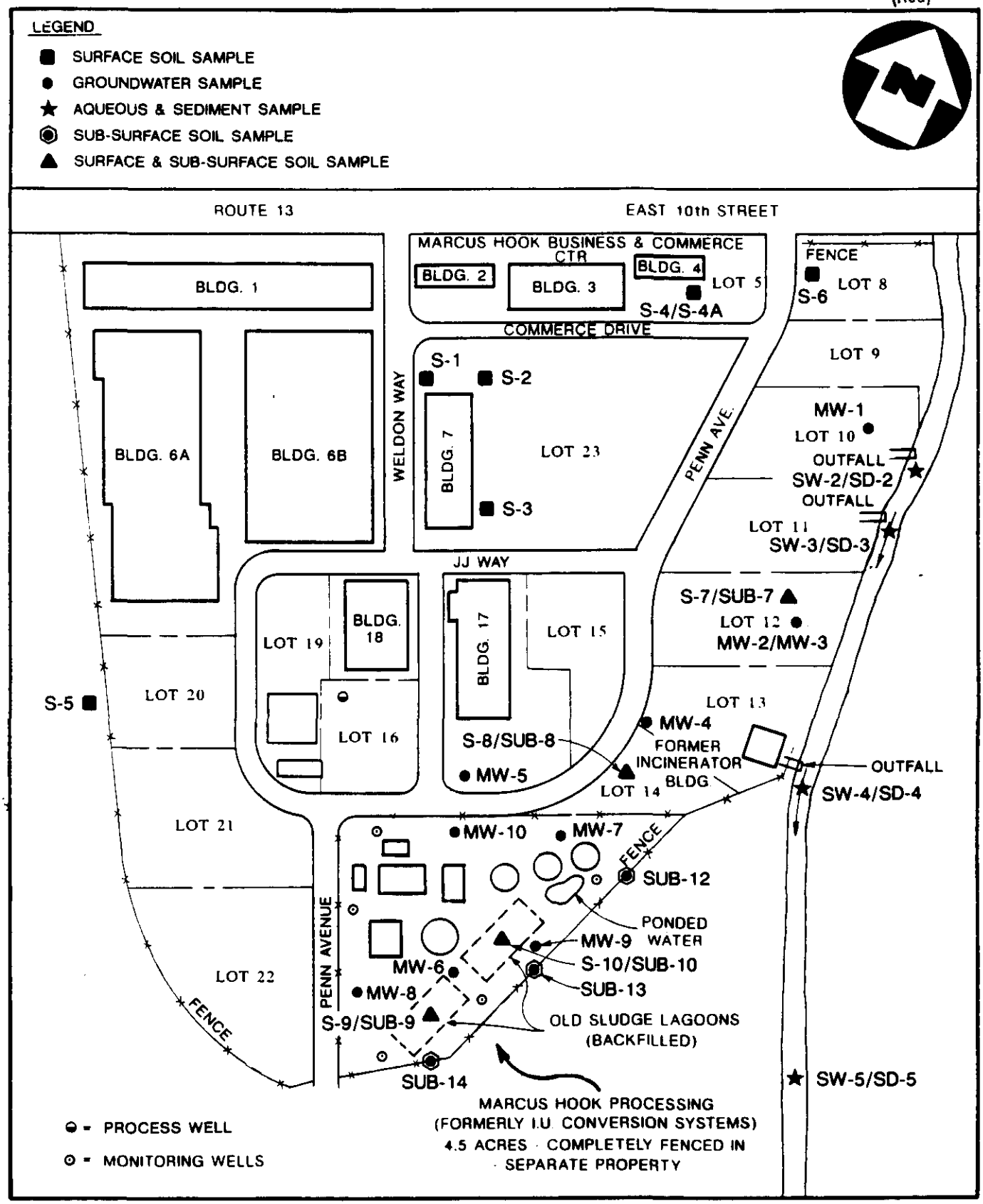

SAMPLE LOCATION MAP

FMC - MARCUS HOOK, MARCUS HOOK, PA

(NO SCALE)

FIGURE 3

NUS CORPORATION

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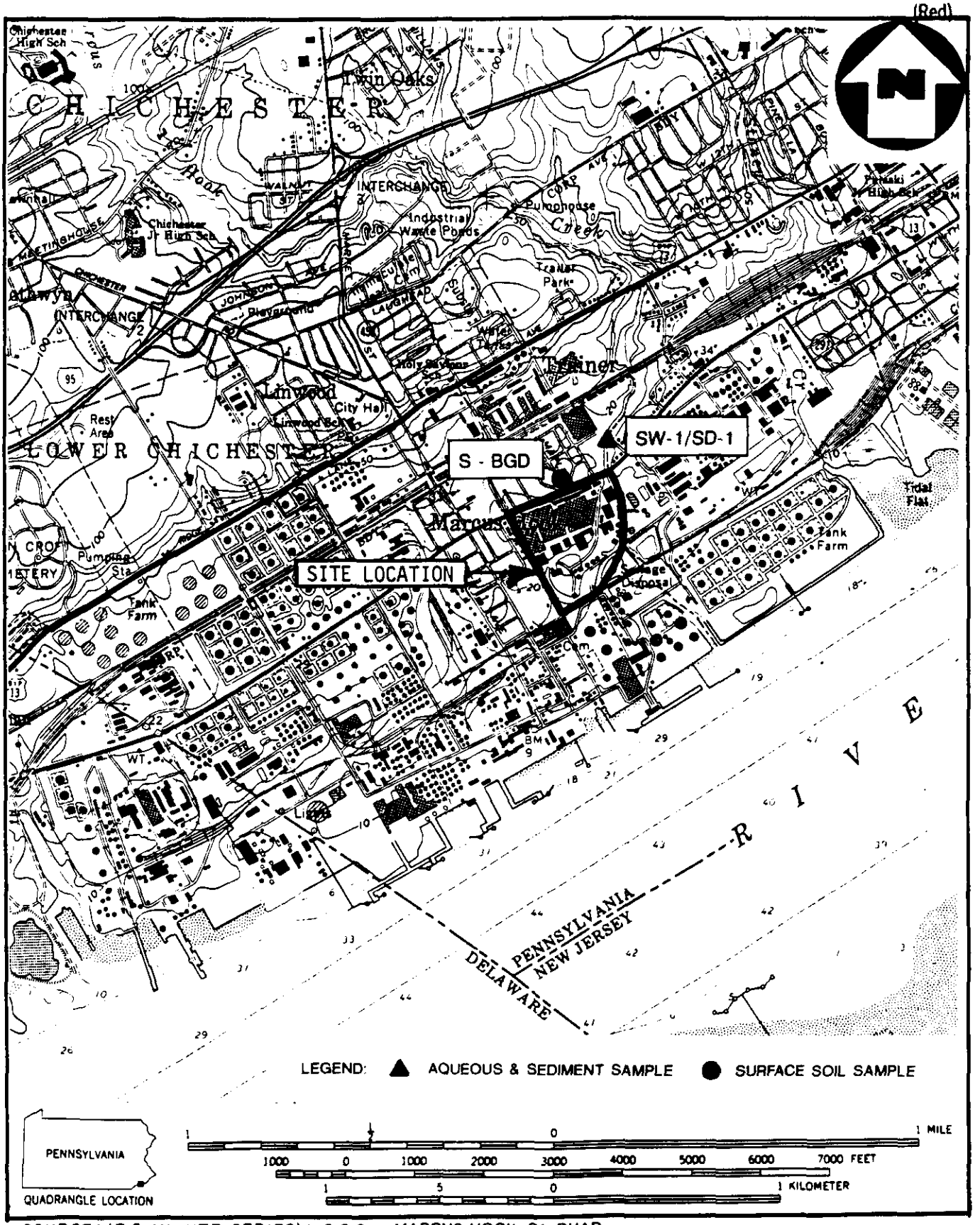

SOURCE: (7.5 MINUTE SERIES) U.S.G.S. MARCUS HOOK, PA QUAD

FIGURE 4

OFF-SITE SAMPLE LOCATION MAP

FMC - MARCUS HOOK, MARCUS HOOK, PA

SCALE 1: 24000

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ATTACHMENT 2

TDD NUMBER 9012-14

EPA NUMBER PA971

SAMPLE LOG

SITE NAME FMC Marcus Hook

TRAFFIC REPORTS Organic	Inorganic	Asbestos Samples	SAMPLE IDENTIFIER	PHASE	SAMPLE DESCRIPTION	SAMPLE LOCATION	TARGET USE	pH (pH meter not operating)	FIELD MEASUREMENTS
CFE01	MCFG01	CFE16	S-1	SOL	Fine brown sand with	S58°E, 193ft. from the entrance to building #1	Within 200ft. of buildings used by employees on-site		
CFE02	MCFG02	CFE21	S-2	SOL	Dry, light brown soil with pebbles	185 ft. south of building #3, 175 ft. southeast of building #2	↓		
CFE03	MCFG03	CFE23	S-3	SOL	Soil scraped into a pile Brown soil mixed with glass tubes and debris	S23°E, 158ft from the entrance of building #2	↓		
CFE04	MCFG04	CFE49	S-4	SOL	Light brown clay	S56°E, 76 ft from the east corner of building #4	↓		
CFE20	MCFG20	CFE50	S-4A Duplicate of S-4	SOL	Light brown clay	Same location as S-4	↓		
CFE05	MCFG05	CFE51	S-5	SOL	Dark brown soil with organic matter	18ft west of the fence, approx 300ft. from the wharf. S8E 150 ft. from building 6A	The west side of the fence Apparently a breached part of the fence used by children to access the site.		
CFE07	MCFG07		S-7 (MATRIX)	SOL	Light brown sand	200ft. North of the incinerator building, 40ft. west of the stream	Open lot in a urban area		
CFE08	MCFG08		Sub-7	SOL	Light brown mixed with dark brown clay	same Location as S-7 2ft. deep	↓		
CFE09	MCFG09		S-8	SOL	Dark brown and silty	Lot #14. 200ft. south of incinerator building 75 ft east of Penn Avenue	↓		

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TDD NUMBER 9012-14

EPA NUMBER PA 971

SAMPLE LOG

SITE NAME FMC Marcus Hook

TRAFFIC REPORTS Organic	Inorganic	High Hazard	SAMPLE IDENTIFIER	PHASE	SAMPLE DESCRIPTION	SAMPLE LOCATION	TARGET USE	pH	FIELD MEASUREMENTS
CFE10	MCFG10		Sub-8	SOL	Dark brown, silty	Same Location as S-8 6in. deep			
CFE11	MCFG11		S-9	SOL	Brown sandy soil with bits of brick	Taken 35Ft west of the fence on the southeastern boundary of the site. Taken in the old lagoon area	Area completely Fenced in.		
CFE12	MCFG12		Sub-9	SOL	Moist, Light gray clay with black and red specks	Same location as S-9. 2ft. deep			
CFE14	MCFG14		S-10	SOL	Light, brownish gray clay with red speck	Taken approx 35-40ft northwest of the southeastern boundary of the site Taken in the old lagoon area			
CFE13	MCFG13		Sub-10	SOL	Moist, dark gray to black clay	Same location as S-10. 2½ Ft. deep			
CFE15	MCFG15		S-11 Duplicate of S-10	SOL	Same as S-10	Same location as S-10			
CFE17	MCFG17		Sub-12 MATRIX	SOL	Brown to dark brown, silty, clay soil	Taken in the northeastern corner of the Marcus Hook Processing property Taken at 2 feet deep			
CFE18	MCFG18		S-b-13	SOL	Medium brown clay with black-gray clay moist and moldy after 2ft. Deep	Approx 60 feet northeast of the small fenced area on marcus Hook Processing. 2ft. from fenceline			
CFE19	MCFG20		S-b14	SOL	Light brown to black, sand to clay mixture with broken glass and brick	Southeastern corner of the marcus Hook Processing property	↓		

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TDD NUMBER 90/2-14

EPA NUMBER PA 971

SAMPLE LOG

SITE NAME FMC Marcus Hook

TRAFFIC REPORTS Organic	Inorganic	High Hazard	SAMPLE IDENTIFIER	PHASE	SAMPLE DESCRIPTION	SAMPLE LOCATION	TARGET USE	pH (pH meter not operational)	FIELD MEASUREMENTS
CFE33	MCFG39		SW-1	AQ	clear, no odor	Upstream, Marcus Hook Creek. 50 ft. northeast of the Route 13 Bridge	The Delaware River, which is 1/3 mile downstream on Marcus Hook Creek, is used as a warm water fishery		
CFE34	MCFG40		SW-2	AQ	clear, with an oily sheen	Taken at the outfall located on Lot # 5			
CFE35	MCFG41		SW-3	AQ	cloudy, with a greenish tint	Directly at the outfall located on Lot # 11			
CFE36	MCFG42		SW-4	AQ	clear, slight odor	Taken at the outfall behind the incinerator building on lot # 15			
CFE37	MCFG43		SW-5	AQ	clear, odorless	Downstream, Marcus Hook Creek. 150 yards downstream from the railroad bridge			
CFE38	MCFG44		Sd-1	SOL	Brown fine sand with lots of pebbles	Same location as SW-1			
CFE39	MCFG45		Sd-2	SOL	Brown to dark black sand and silt. slight oil odor	Same location as SW-2			
CFE40	MCFG46		Sd-3	SOL	Black, moist silt. Tar-like odor	Same Location as SW-3			
CFE41	MCFG47		Sd-4	SOL	brown to black sand with an oily sheen	Same location as SW-4	✓		

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TDD NUMBER 9012-14

EPA NUMBER PA971

SAMPLE LOG

SITE NAME FMC Marcus Hook

TRAFFIC REPORTS Organic	Inorganic	High Hazard	SAMPLE IDENTIFIER	PHASE	SAMPLE DESCRIPTION	SAMPLE LOCATION	TARGET USE	pH	FIELD MEASUREMENTS
CFE42	MCFG48		Sd-5	SOL	Black silty sediment with some clay. Oily sheen	same location as SW-5			
CFE24	MCFG24		S-Back	SOL	Very dark brown silty and moist	Background soil Small park opposite the s.k. N 6°E, 27 Ft from a flagpole			
CFE32			Trip blank #1	AQ	AQ blank associated with solid samples		Quality Assurance		
CFE48			Trip blank #2	AQ	AQ Blank associated with solid samples				
CFE22			Trip blank #3	AQ	AQ Blank associated with solid samples				
CFE31	MCFG38		AQ Blank #1	AQ	AQ Blank				
CFE47	MCFG57		AQ Blank #2	AQ	AQ Blank				
CFE25	MCFG25		MW-1	AQ	water rust colored No odor	Monitoring well located on Lot #10	Monitoring well		
	MCFG26		MW-1F	AQ	water rust colored no odor	same location as MW-1			

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TDD NUMBER 9012-14
EPA NUMBER PA971

SAMPLE LOG

SITE NAME FMC Marcus Hook

TRAFFIC REPORTS Organic	Inorganic	High Hazard	SAMPLE IDENTIFIER	PHASE	SAMPLE DESCRIPTION	SAMPLE LOCATION	TARGET USE	pH	FIELD MEASUREMENTS
CFE26	MCFG27		MW-2	AQ	Cloudy, no odor	Monitoring well located in Lot #12	Monitoring well		
	MCFG28		MW-2F	AQ	Same as MW-2	same as MW-2			
CFE27	MCFG29		MW-3	AQ	Cloudy, no odor Duplicate of MW-2	Duplicate of MW-2 Same location as MW-2			
	MCFG30		MW-3F	AQ	Same as MW-3 Duplicate of MW-2F	Same as MW-3			
CFE28	MCFG31		MW-4	AQ	Rust colored, no odor	Monitoring well on the southwestern corner of Lot #13			
	MCFG32		MW-4F	AQ	same as MW-4	same location as MW-4			
CFE29	MCFG33		MW-5	AQ	Clear, no odor	Monitoring well located south of building #17			
	MCFG34		MW-5F	AQ	Same as MW-5	same location as MW-5			
CFE30	MCFG35		MW-6	AQ	Black with an oily sheen. Slfur odor	Monitoring well located southeast of the clarifier tank on Marcus Hook Ave. Property Between old lagoons	✓		Spike on OVM in the well head

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TDD NUMBER 9012-14
EPA NUMBER PA971

SAMPLE LOG

SITE NAME FMC Marcus Hook

TRAFFIC REPORTS Organic	Inorganic	High Hazard	SAMPLE IDENTIFIER	PHASE	SAMPLE DESCRIPTION	SAMPLE LOCATION	TARGET USE	pH	FIELD MEASUREMENTS
	MCFG36		MW-6F	AQ	Same as MW-6 (filtered sample)	Same location as MW-6	Monitoring well		
CFE43	MCFG49		MW-7	AQ	Very cloudy, no odor	Monitoring well located at the northeastern corner of the Marcus Hook Prop. Property.			
	MCFG50		MW-7F	AQ	Same as MW-7 (filtered sample)	Same location as MW-7			
CFE44	MCFG51		MW-8	AQ	Cloudy with an oily sheen	Monitoring well located northwest of the fenced-in area on the southern corner of Marcus Hook Prop. Prop			
	MCFG52		MW-8F	AQ	Same as MW-8 (filtered sample)	Same location as MW-8			
CFE45	MCFG53		MW-9	AQ	Very murky, no odor	Monitoring well located east of old lagoon #2 on Marcus Hook Processing.			
	MCFG54		MW-9F	AQ	Same as MW-9 (filtered sample)	Same location as MW-9			
CFE46	MCFG55		MW-10	AQ	clear, no odor	Monitoring well located north of the lime building on Marcus Hook Prop.'s fence line			
	MCFG56		MW-10F	AQ	Same as MW-10 (filtered sample)	Same location as MW-10	✓		

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TDD NUMBER 9012-14

EPA NUMBER PA 971

SAMPLE LOG

SITE NAME Fyne Manufacturing

TRAFFIC REPORTS Organic	TRAFFIC REPORTS Inorganic	TRAFFIC REPORTS High Hazard	SAMPLE IDENTIFIER	PHASE	SAMPLE DESCRIPTION	SAMPLE LOCATION	TARGET USE	pH	FIELD MEASUREMENTS
	MCFG37		Filtered Blank #1	AQ	Blank		Quality Assurance		
	MCFG38		Filtered Blank #2	AQ	Blank		↓		

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FMC/Marcus Hook F1+/SI

In Reference to Case No(s): 15742

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Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM
Telephone Record Log

Date of Call: 1-28-91

Laboratory Name: Compuchem

Lab Contact: [redacted] Not responsive due to revised scope

Region: Region III

Regional Contact: J. Snyder / C. Walling

Call Initiated By: X Laboratory ___ Region

In reference to data for the following sample number(s):

CFE47

CFE42

Summary of Questions/Issues Discussed:

Lab says aqueous sample CFE42 is missing from sample. It is listed on the paperwork. CFE47, a ~~aqueous~~ solid sample, is a blank that lab received but is not listed on paperwork.

Summary of Resolution:

Sampler says CFE42 was collected and shipped and came from station location S5. It consists of 2 VOA vials and a glass jar - solid sample. Lab says they do not have CFE42. CFE47 was mistakenly left out of paperwork. Lab is to note problem with CFE42 in case narrative and run sample if it is located. Sampler will write memo-to-file to add CFE47 to paperwork. Lab will please note all problems in case narrative and include a copy of this phone log and sampler's memo-to-file.

Signature Collen Walling 2-1-91 / J. Snyder

Date 1-28-91

Distribution: (1) Lab Copy, (2) Region Copy, (3) SMO Copy (4) RPM-Laura Acker 3HW13 (5) XO/Reg Hem 3W13 (6) AFC-Steve Wilding (7) NUS Corp. - Not responsive due to revised scope (8) site file (9) trouble file

NUS CORPORATION
999 WEST VALLEY ROAD
WAYNE, PENNSYLVANIA 19087
215 687 9510

ORIGINAL

January 2, 1991
R-585-12-0-30
68-01-7346

Mr. Gregory Ham
U.S. Environmental Protection Agency
841 Chestnut Building
Ninth and Chestnut Streets
Philadelphia, PA 19107

Subject: Sampling Plan
TDD No. F3-9012-14
EPA No. PA-971
FMC Marcus Hook
Marcus Hook, Delaware County, Pennsylvania

Dear Mr. Ham:

Submitted herewith is a sampling plan for the subject site. The site inspection has been tentatively scheduled for the week of January 21, 1991. Permission for site access was obtained from Jamie Koufman, of Marcus Hook Processing, and Leon Winitsky, of Marcus Hook Business and Commerce. George Danyliw, of the Pennsylvania Department of Environmental Resources (PA DER), will be notified of the investigation.

Summary

The site, located in Marcus Hook, Delaware County, Pennsylvania, is an approximately 38-acre inactive rayon-cellophane manufacturing plant. The facility lies within a highly industrialized, densely populated urban setting. The property is 1/3 mile northwest of the Delaware River and is bordered on the east by Marcus Hook Creek.

The American Viscose Corporation produced rayon at the site from the early 1940s until 1954. Cellophane was produced from 1958 until 1963. Rayon and cellophane production both involve the regeneration of cellulose, known as the viscous process. Various compounds, acids, and solvents, including carbon disulfide, sulfuric acid, sodium sulfate, and polyvinyl chloride, were used in the manufacturing process.

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Untreated discharges from plant processes were released to Marcus Hook Creek until 1945. In response to a Sanitary Water Board order, a wastewater treatment plant was built on the southeastern corner of the property. Initial disposal practices of the resultant waste sludge, containing heavy metal sulfides, are not known. In 1957, two large sludge lagoons were built near the treatment plant. The two lagoons were backfilled in 1977. There is information indicating that the second lagoon was pumped out, but it is not clear if the contents of the first lagoon were removed. The closed sludge lagoons are located on property now owned by Marcus Hook Processing, Incorporated, a subsidiary of Enviro Safe, Incorporated, which removes heavy metals from solutions. There are 10 monitoring wells located on this property.

The facility utilized five NPDES-permitted outfalls. The 001 outfall was used for non-contact cooling water and for the effluent from the waste treatment plant. The 002 outfall was utilized for non-contact cooling water, sump pumps, and yard drains. The 003 outfall was used for non-contact cooling water from the boiler house and powerhouse. The 004 outfall was used for cooling water from air conditioning from one of the laboratories. However, FMC was cited for allegedly discharging dyes through the outfall. The 005 outfall was used as a discharge for the water treatment plant.

In 1963, FMC Corporation purchased the facilities and produced cellophane until operations ended in 1978. The Marcus Hook Business and Commerce Center owns the majority of the property and rents building space. Many of the old FMC facilities have been demolished. In order to address the entire site, the property will be discussed lot by lot, building by building.

The following information was obtained from a preliminary assessment conducted by PA DER in 1986, environmental assessments performed by NTH Consultants in February 1990 and Weston in June 1990, and a removal assessment performed by EPA in December 1990.

The following properties are located along Route 13 (East Tenth Street):

Building No. 1 - This building is a five-story brick structure that housed the FMC Research and Development operation. The first floor of this building housed a community center for senior citizens and Boy Scouts and a day care center for approximately 70 children. Air sampling revealed asbestos contamination; the community center and day care center were subsequently closed. There are approximately 20 trash bags of asbestos on the second floor.

Building No. 2 - No information was available.

Building No. 3 - This building contained office space, a cafeteria, and a bowling alley. Approximately 58 drums were abandoned in this building. There was also asbestos contamination in the building (approximately 50 trash bags).

Building No. 4 - This building was a garage with bays to service equipment. There were two underground gasoline tanks near the building. The fate of the underground tanks is not known.

Lot No. 5 - There is no information on use of this area. Two drums were discovered in a manhole on this lot.

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The following lots are east of Pennsylvania Avenue. It should be noted that these lots were backfilled approximately eight feet higher than the original grade.

Lot No. 8 - This lot was utilized as a parking lot. Roy F. Weston, Incorporated attempted to install a monitoring well in August 1990 but encountered bedrock at six feet and abandoned the boring.

Lot No. 9 - FMC's powerhouse was located on this lot. The building has since been demolished. Ash is located along the bank of Marcus Hook Creek.

Lot Nos. 10 and 11 - Concrete cooling ponds associated with the powerhouse operations were located on these lots. The ponds are currently backfilled with rubble. A 20-feet-deep monitoring well was installed by Weston in lot no. 10 in August 1990. It is not known whether the well is still intact. A former outfall pipe to Marcus Hook Creek is on lot no. 10.

Lot No. 12 - A pilot plant, an anhydrous sodium sulfate work area, and an acid reclaim building were located on this lot. Three above-ground sulfuric acid tanks were also located in this area. The buildings have since been demolished and the tanks have been removed. A 22-feet-deep monitoring well was installed near the old tank area by Weston in August 1990. It is not known whether the well is still intact.

Lot No. 13 - An old incinerator building is located on this lot. There is also an old acid reclaim cooling tower pond that has since been backfilled with debris. Several drums of polychlorinated-biphenyl (PCB)-contaminated oil were left in the building, and old transformer carcasses were apparently discarded on the ground.

Lot No. 14 - This was the location of an old railroad siding. The lot is currently a vacant field.

The following properties are between Commerce Drive, Weldon Way, and Penn Avenue:

Lot No. 23 - This lot is the former location of the spinning building. The building has been demolished and the basement has been backfilled with rubble and possibly asbestos. The stack for venting acid during the operations is still standing.

Building No. 7 - This building is a former warehouse for mechanical equipment. Drums of PCB-contaminated oil were left on a pad outside the building.

Building No. 17 - The cure and mix operations were located in this building. There were numerous tanks inside the building, some of which are still there. A transformer inside apparently leaked 50 to 75 gallons of oil, which may have been "cleaned up" with sawdust.

Lot No. 15 - A steeping building was located on this lot. The building has since been demolished. There are also allegations that asbestos was buried in this area.

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The following properties are west of Weldon Way:

Building Nos. 6A and 6B - No information was available on past operations in this area. There are laboratory chemicals in the basement of building 6A and unknown tanks on the second floor.

Building No. 18, Lot Nos. 16 and 19 - This property is currently occupied by K & S Waste Processors, which operates a pathological waste incinerator. This licensed hospital waste incineration process began in 1982. Carbon disulfide was stored in underground tanks during FMC's and possibly American Viscose's operations. In 1981, these tanks were purged and stabilized with residual material, and the pit was sealed with concrete. This whole area has also apparently been regraded.

The following properties are west of Weldon Way and Pennsylvania Avenue:

Lot No. 20 - A coating building was located on this lot. The building has since been demolished. A fort built by children was discovered on this lot (a school is located immediately to the west).

Lot No. 21 - This is the location of the former solvent recovery and lacquer mix operation. All buildings have since been demolished. A path under the fence near the school was discovered on this lot.

Lot No. 22 - This lot is the location of the former underground tank farm used to store solvents. Thirty underground tanks were used to store a total of 82,000 gallons of solvents. Aerial photographs indicated that these tanks were installed sometime between 1940 and 1959. It is reported that the tanks were pumped out and filled with water in 1979. In March 1988, the contents of the tanks were tested and removed.

Drinking Water Supply

The Pennsylvania portion of the three-mile study area is supplied with potable water by the Chester Water Authority. The Chester Water Authority services over 300,000 customers in an area bordered by the Delaware River to the east, the Delaware state line to the south, and Route 1 to the north and west. The source of this water is (b) (9) in Lancaster County, more than 35 miles west of the site.

The Delaware portion of the three-mile study area is supplied with potable water by the Wilmington Suburban Water Company. Wilmington Suburban Water Company utilizes surface water intakes on (b) (9) in Delaware to service over 90,000 customers. These sources, which are outside the three-mile study area, are not expected to be impacted by the site. Wilmington Suburban Water Company is interconnected with the city of Newark and the Artesian Water Company of Delaware.

FIT 3 conducted a home well survey but could not identify any wells within 1/4 mile of the site. Although public water is available in the study area, some residents may have opted to maintain private home wells. There are no surface water intakes on the Delaware River within the three-mile study area.

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A portion of the three-mile study area extends across the Delaware River into New Jersey. This area is not serviced by a public water system. Home owners and industries utilize private wells for potable water supply. Using the United States Geological Survey (U.S.G.S.) topographical map house-count method, it is estimated that 407 people utilize home wells for potable water supply in the New Jersey portion of the 3-mile study area.

Geology Information

The FMC-Marcus Hook site is located in the Coastal Plain Physiographic Province. This province consists of unconsolidated and poorly consolidated sediments of recent to Cretaceous age. These sediments dip gently to the southeast. The drainage pattern of streams in the Coastal Plain is dendritic.

The site is underlain by Quaternary age sediments mapped as Trenton gravel. The Trenton gravel is equivalent to the Pleistocene sediments of Wisconsin age described by earlier workers. This formation consists of gray or pale reddish-brown, very gravelly sand interstratified with crossbedded sand and clay-silt beds. Included as part of the Trenton gravel are areas of recent alluvium and swamp deposits. In the region, sand and gravel deposits are typically 40 feet thick. The thickness of recent alluvial and swamp deposits rarely exceeds 28 feet in thickness; they usually are less than 10 feet thick.

Beneath the Coastal Plain sediments is bedrock consisting of Precambrian age crystalline rock. These rocks consist chiefly of schist of the Wissahickon Formation and scattered masses of gneissose rock with granitic to gabbroic composition. The extent of the thickness of the basement rock is unknown.

The soil beneath the site is mapped as Made land dominated by gravelly materials. This land type consists of areas in which the profile of the normal soil has been destroyed or covered by earth-moving equipment for urban or industrial development.

Groundwater Information

(b) (9) [redacted]

The expected direction of groundwater flow is to the east and southeast, toward Marcus Hook Creek and the Delaware River.

Sampling to Date

Over the last several years, the subject site has been the focus of a number of investigations. In February 1990, NTH Consultants was contracted to conduct an environmental assessment of the old solvent tank farm area in order to sell the property. In June 1990, Weston was contracted to identify the major environmental problems at the subject site in order for another potential property sale. In November 1990, Accredited Environmental Technologies, Incorporated was contracted to determine the extent of airborne asbestos in building no. 1 on site. In December 1990, EPA conducted a removal assessment of the site. The site was investigated lot by lot, and the results are expected to be available after January 4, 1991.

In order to be thorough, the sampling conducted on site will be discussed lot by lot, building by building. It should be noted that all Weston's soil samples were obtained at a depth of at least three feet. The majority of the samples collected by the EPA removal assessment were analyzed for full scan, except where PCB and asbestos results were given. Polarized light microscopy was used to determine the amount of asbestos fibers in each sample.

Properties Located Along Route 13 (East Tenth Street)

Building No. 1 - Asbestos debris was observed throughout second, third, fourth, and fifth floors of the building. Air sampling revealed asbestos contamination on all floors. Paint chips on fourth and fifth floors revealed lead up to 1,000 ppm.

Building No. 2 - No sampling information is available.

Building No. 3 - Roy F. Weston's assessment found 58 drums of unknown material. EPA's removal assessment identified up to 750 ppm PCBs in drums and up to 522 ppm PCBs on the floor.

Building No. 4 - No sample analysis is available.

Lot No. 5 - During EPA's removal assessment, an abandoned drum in a shed and a drum adjacent to a manhole were sampled. Water in a trench and stained gravel and mud were also sampled. The analysis is not yet available.

Properties East of Penn Avenue

Lot No. 8 - No sample analysis is available.

Lot No. 9 - EPA's removal assessment sampled ash and surface soil. The analysis is not yet available.

Lot No. 10 - Weston's sampling of the monitoring well on lot no. 10 revealed 1,1-dichloroethane (5 ppb), 1,1,1-trichloroethane (3 ppb), and mercury (0.27 ppb). The removal assessment identified asbestos in the surface soil and the sampled stained soil at two locations, soil in a depression, and sediment below the outfall pipe. The analysis is not yet available.

ORIGINAL
(Red)

Lot No. 11 - The sampling during the removal assessment positively identified asbestos in the surface soil and debris. Two soils and one cinder pile along the stream bank were also sampled. The analysis is not yet available.

Lot No. 12 - Sampling during Weston's assessment revealed lead up to 740 ppm and mercury up to 120 ppm in the soils. The monitoring well also revealed nickel up to 492 ppb and cadmium up to 6.1 ppb. EPA's removal assessment positively identified asbestos in the surface soils and debris. The removal assessment also identified and sampled an oily substance in an underlying tunnel. The analyses are not yet available.

Lot No. 13 - Weston's sampling revealed chromium up to 25.2 ppm and nickel up to 12.3 ppm in the soils. The monitoring well on the lot also revealed up to 326 ppb nickel and 11.7 ppb lead. EPA's removal assessment revealed PCBs up to 284 ppm in a drum in the incinerator building. Incinerator ash in the building also revealed up to 240 ppb dichloroethene and up to 1.8 ppm cyanide. Soil in a pit below transformer carcasses and spill material mixed with debris were also sampled. The analyses are not yet available.

Lot No. 14 - No sample analysis was available.

Southeastern Corner of the Property

The only sample analysis available for this property comprises a limited number of parameters that were analyzed in the 10 monitoring wells between 1980 and 1984. Low levels of heavy metals were detected in the groundwater.

Properties Between Commerce Drive, Weldon Way and Penn Avenue

Lot No. 23 - Roy F. Weston dug two test pits in the debris during its assessment, but no samples were obtained. A trench dug during EPA's removal assessment revealed PCBs up to 158 ppm. At least five additional samples were to be analyzed for PCBs.

Building No. 7 - Drums located on a pad southeast of the building were analyzed for PCBs during the removal assessment. PCBs up to 27 ppm were detected in the drums.

Building No. 17 - The removal assessment determined that sawdust in bags in the building contained up to 77,800 ppm PCBs, and the floor was contaminated with up to 440 ppm PCBs. Soil southeast of the building was also sampled. The analyses are not yet available.

Lot No. 15 - No sample analyses are available.

ORIGINAL
(Red)

Properties West of Weldon Way

Building Nos. 6A and 6B - The removal assessment sampled a five-gallon container for PCBs. Several drums were sampled in the buildings; PCBs up to 40 ppm were detected. Soil by a drain revealed 23 ppm PCBs, and sediment in a manhole revealed 6.6 ppm PCBs. A trench was also apparently sampled. Analyses are not yet available.

Building No. 18, Lot Nos. 16 and 19 - No sample analysis is available.

Properties West of Weldon Way and Penn Avenue

Lot No. 20 - The removal assessment identified asbestos in the soil and debris. Samples were also collected from stained soil by the children's fort, a crushed drum near the road, two surface soils, and at least one surface liquid. Analyses are not yet available.

Lot No. 21 - The removal assessment identified asbestos on the soil and debris. At least four soil samples were obtained, including a soil sample on a children's pathway under a fence leading to the adjacent school. Blue-stained sand and a crushed drum were also sampled. Analyses are not yet available.

Lot No. 22 - NTH Russel's sampling revealed up to 322 ppb toluene in the fill material overlying the tanks. The removal assessment obtained one soil sample and two cinder pile composite samples. Analyses are not yet available.

Proposed Sampling Plan

- The proposed sampling locations will be added after a meeting with Lorie Acker, of EPA.

Michael Heffron has been appointed team leader and will be responsible for the sampling plan.

ORIGINAL
(Red)

Mr. Gregory Ham
U.S. Environmental Protection Agency
January 2, 1991 - Page 9
FMC Marcus Hook Sampling Plan

Please endorse below and return with your approval or amendments to this plan. If you have any questions, please feel free to contact either Andrew Frebowitz or Michael Heffron.

Respectfully,

Not responsive due to revised scope

Assistant Manager

Not responsive due to revised scope

Section Supervisor

Not responsive due to revised scope

Quality Assurance

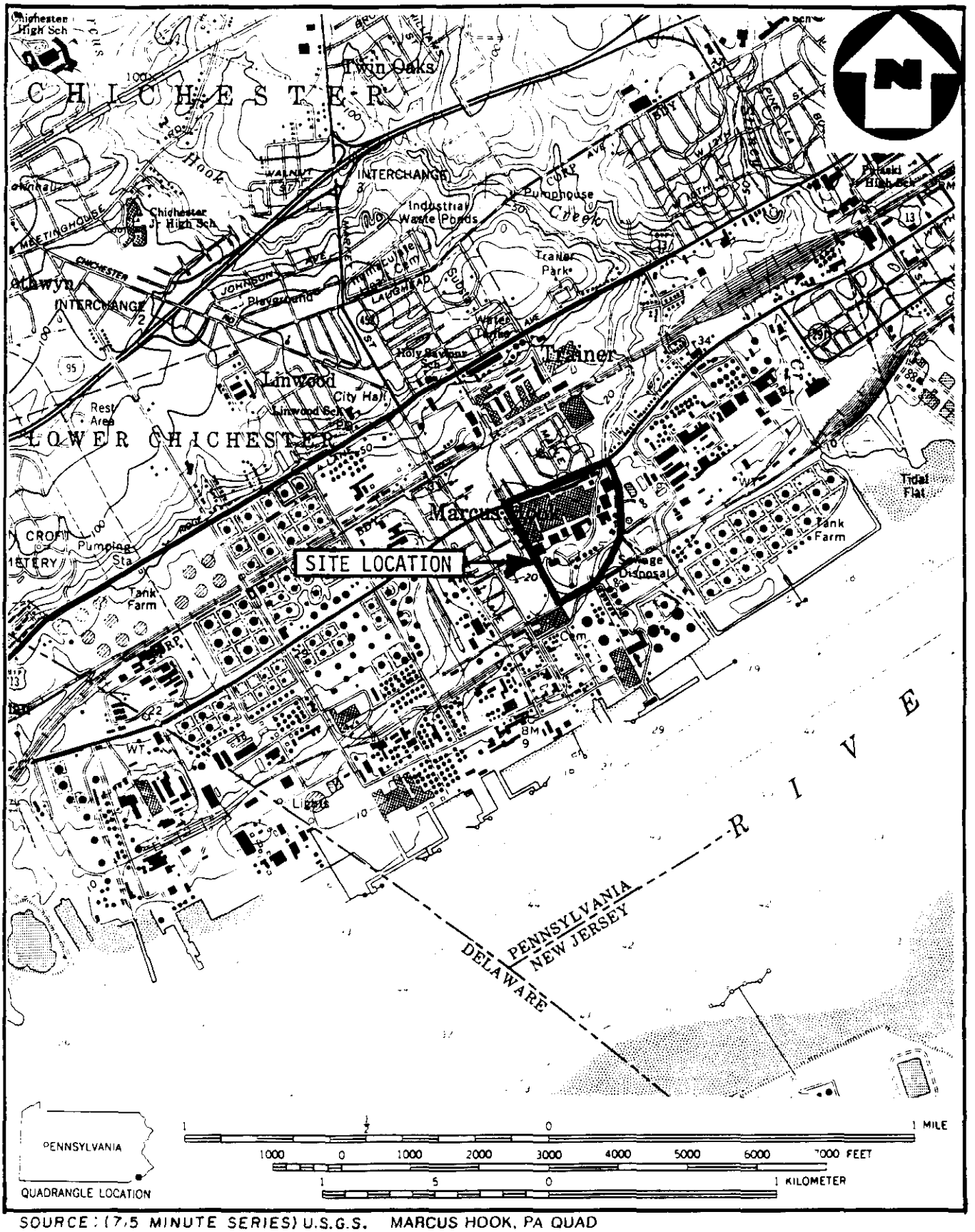
AF/js

Attachments

Approved by: Not responsive due to revised scope

Date: 1/10/91

Amendments: _____



SOURCE: (7.5 MINUTE SERIES) U.S.G.S. MARCUS HOOK, PA QUAD

FIGURE 1

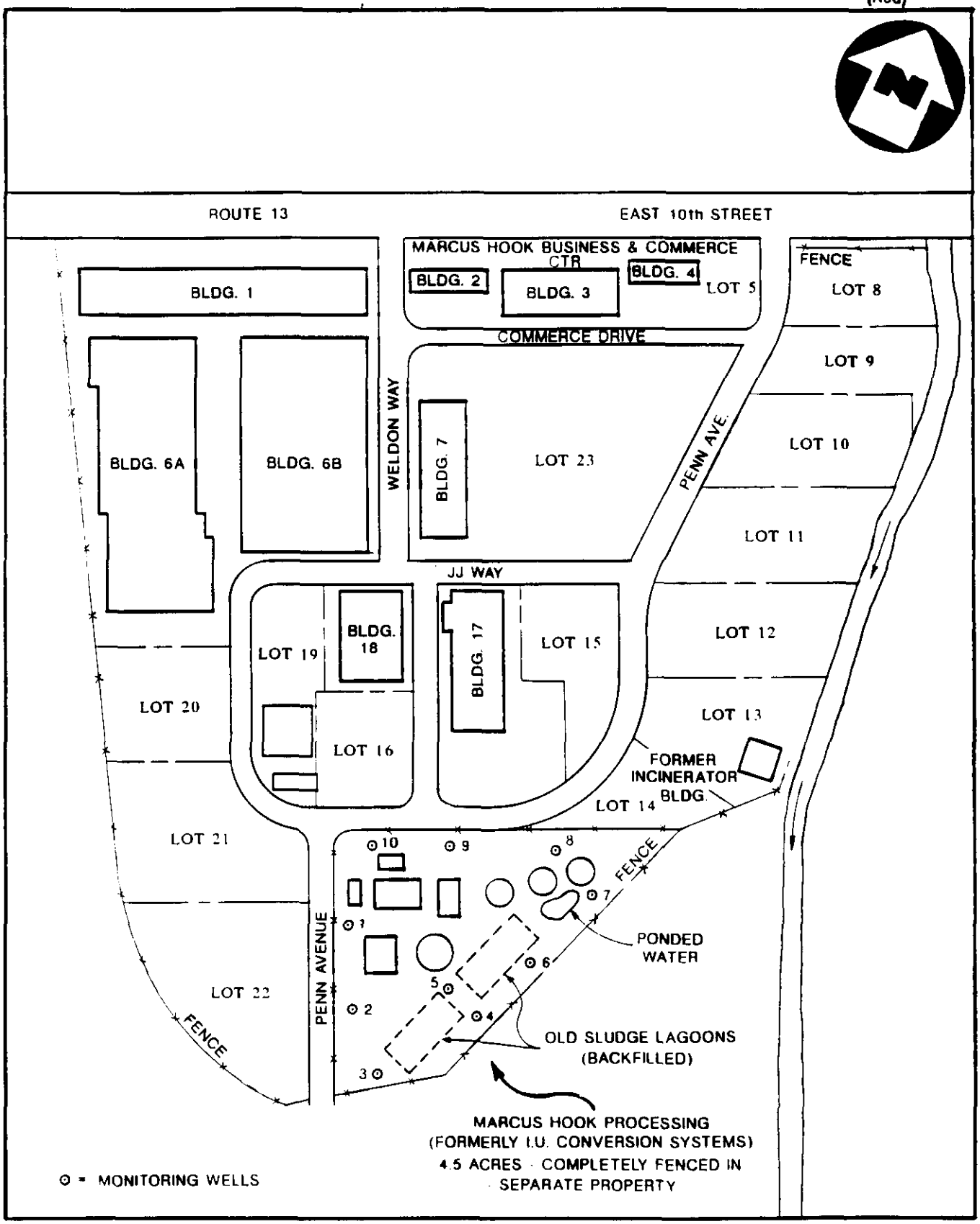
SITE LOCATION MAP

FMC - MARCUS HOOK, MARCUS HOOK, PA

SCALE 1: 24000

NUS CORPORATION

ORIGINAL
(Red)



SITE SKETCH

FIGURE

FMC - MARCUS HOOK, MARCUS HOOK, PA

(NO SCALE)

NUS CORPORATION